

ABSTRACT

A magnetoresistive sensor element is provided, having a magnetoresistive layer system which, in top view, is at least regionally striated. The sensor element operates on the basis of the GMR effect and is constructed according to the spin valve principle, the striated layer system featuring a reference layer having a direction of magnetization substantially uninfluenced by a direction of an outer magnetic field acting on it. During operation, the sensor element provides a measuring signal which changes as a function of a measurement angle between the component of the field strength of the outer magnetic field lying in the plane of the layer system, and the direction of magnetization, and from which this measurement angle is able to be ascertained. In addition, observed in a top view of the striated layer system, the angle between the direction of magnetization in the absence of the outer magnetic field and the longitudinal direction of the striated layer system is set in such a way that in response to an influence of the outer magnetic field having a defined field strength, which is selected from a predefined work interval, the angle error of the layer system, as a function of this angle and the field strength, is minimal.